

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the previous amendments and following remarks.

Before discussing the subject matter recited in the claims of this application and as a preface to commenting on the issues raised in the most recent Official Action, the following general overview is provided of features and operational characteristics associated with a catheter according to at least one embodiment described and illustrated in the present application.

The catheter 1 includes a proximal shaft 15, an intermediate member 14 connected to the front side of the proximal shaft 15, a distal shaft 13 connected to the front portion of the intermediate member 14, a balloon 12 connected at the front portion of the distal shaft 13, and a guide wire lumen 11 allowing a guide wire to be inserted therethrough. The guide wire lumen 11 includes a distal side aperture 111 positioned on the distal side from the front end of the balloon 12 and a proximal side aperture 141 formed in the side surface of the intermediate member 14. The front portion of the distal shaft 13, positioned on the rear side from the balloon 12, is configured as a grooved portion 131 having a groove 132. As discussed in the paragraph starting on line 10 of page 14 and as illustrated in Fig. 1, the grooved portion 131 is provided at a portion adjacent to the balloon 12 and extends toward the proximal side of the distal shaft 13. As further illustrated in Fig. 1, a rear portion of the distal shaft 13 is free of grooves.

As discussed in lines 4-20 of page 12 and as illustrated in Fig. 5 of the specification, the proximal shaft 15 includes a main shaft portion 153 and a proximal shaft insertion portion 152. The proximal shaft insertion portion 152 is formed by

spirally slitting the front portion of the proximal shaft 15. The pitch of the spiral slit is relatively short on the distal side of the slit and relatively long on the proximal side of the slit. In an intermediate portion, the pitch of the slit becomes relatively shorter toward the distal end.

Turning now to the claims, Claim 1 is rejected as being unpatentable over U.S. Patent No. 6,036,670, hereinafter Wijeratne, in view of U.S. Patent No. 5,911,715, hereinafter Berg.

Claim 1 recites a catheter including, *inter alia*, a proximal shaft, an intermediate member connected to a front side of the proximal shaft, a distal shaft connected to a front portion of the intermediate member, a balloon connected at a front portion of the distal shaft, and a guide wire lumen for allowing a guide wire to be inserted through the guide wire lumen. The guide wire lumen includes a distal side aperture positioned on the distal side from a front end of the balloon and a proximal side aperture formed in a side surface of the intermediate member. The front portion of the distal shaft is configured as a grooved portion having a groove and is positioned on a rear side of the balloon, and a rear portion of the distal shaft is free of grooves. The grooved portion is provided at a portion adjacent to the balloon and extends toward a proximal side of the distal shaft.

In discussing Claim 1, the Official Action correctly notes that Wijeratne's catheter does not include a front portion, positioned on a rear side from a balloon, of a distal shaft configured as a grooved portion having a groove, or that a grooved portion is provided at a portion adjacent to a balloon. The Official Action goes on to take the position that it would have been obvious to an ordinarily skilled artisan in view of Berg to have modified Wijeratne's outer body tube 22 to include a front

portion, positioned on a rear side from a balloon, configured as a grooved portion having a groove, and to provide the grooved portion at a portion adjacent to the balloon member 22, with the result that Wijeratne's outer body tube 22 corresponds to a distal shaft as recited, "in order to provide a device having increased flexibility for better maneuverability". Applicants respectfully disagree for reasons discussed in previous responses.

Nevertheless, to advance prosecution, Claim 1 is amended to recite that the proximal shaft includes a main shaft portion and a proximal shaft insertion portion formed by spiral slit on a front portion of the proximal shaft and inserted into a rear portion of the intermediate member, and a pitch of the spiral slit becomes gradually shorter toward a distal end of the spiral slit. Wijeratne clearly does not disclose this feature, and Berg does not cure this deficiency in Wijeratne.

Claim 1 is therefore allowable over Wijeratne in view of Berg, and withdrawal of the rejection of Claim 1 is respectfully requested.

Independent Claim 25 is rejected as being unpatentable over Wijeratne in view of Berg and U.S. Patent No. 5,217,482, hereinafter Keith.

Claim 25 is amended to that the proximal shaft includes a main shaft portion and a proximal shaft insertion portion formed by spiral slit on a front portion of the proximal shaft and inserted into a rear portion of the intermediate member, and a pitch of the spiral slit becomes gradually shorter toward a distal end of the spiral slit. As discussed above with respect to Claim 1, Wijeratne clearly does not disclose this feature. Moreover, neither Berg nor Keith not cure this deficiency in Wijeratne.

Claim 25 is therefore allowable over Wijeratne in view of Berg and Keith, and withdrawal of the rejection of Claim 25 is respectfully requested.

Independent Claim 29 is rejected as being unpatentable over Wijeratne in view of Berg.

Claim 29 is amended to that the proximal shaft includes a main shaft portion and a proximal shaft insertion portion formed by spiral slit on a front portion of the proximal shaft and inserted into a rear portion of the intermediate member, and a pitch of the spiral slit becomes gradually shorter toward a distal end of the spiral slit. As discussed above with respect to Claim 1, Wijeratne clearly does not disclose this feature, and Berg does not cure this deficiency in Wijeratne.

Claim 29 is therefore allowable over Wijeratne in view of Berg, and withdrawal of the rejection of Claim 29 is respectfully requested.

The dependent claims are allowable at least by virtue of their dependence from allowable independent claims. Thus, a detailed discussion of the additional distinguishing features recited in the dependent claims is not set forth at this time.

Early and favorable action with respect to this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.20(d) and 1.21 that may be required by this paper, and to

credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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By: /Peter T. deVore/
Matthew L. Schneider
Registration No. 32814

Peter T. deVore
Registration No. 60361

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620